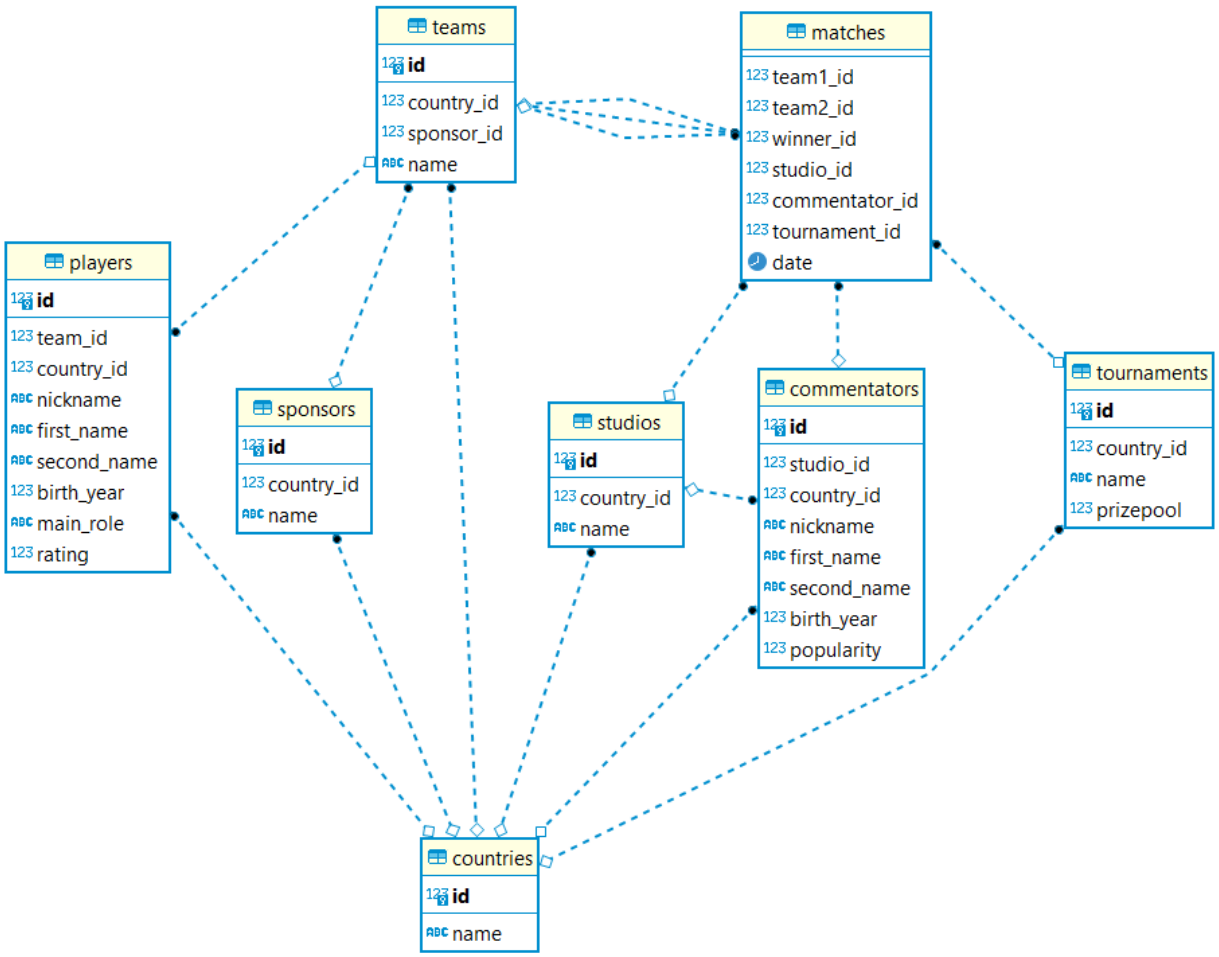
Сущности базы данных



1) Создание В SWI-prolog нету создания таблиц

	`create table if not exists Countries` `(` `  id serial primary key,` `  name text` `);`
	`create table if not exists Sponsors` `(` `  id serial primary key,` `  country_id int,` `  FOREIGN KEY (country_id) REFERENCES public.Countries (id),` `  name text` `);`
	`create table if not exists Teams` `(` `  id serial primary key,` `  country_id int,` `  sponsor_id int,` `  FOREIGN KEY (country_id) REFERENCES public.Countries (id),` `  FOREIGN KEY (sponsor_id) REFERENCES public.Sponsors (id),` `  name text` `);`

	`` create table if not exists Players (id serial primary key, team_id int, country_id int, FOREIGN KEY (team_id) REFERENCES public.Teams (id), FOREIGN KEY (country_id) REFERENCES public.Countries (id), nickname text, first_name text, second_name text, birth_year int, main_role text, rating int); ```
	`` create table if not exists Studios (id serial primary key, country_id int, FOREIGN KEY (country_id) REFERENCES public.Countries (id), name text); ```
	`` create table if not exists Commentators (id serial primary key, studio_id int, country_id int, FOREIGN KEY (studio_id) REFERENCES public.Studios (id), FOREIGN KEY (country_id) REFERENCES public.Countries (id), nickname text, first_name text, second_name text, birth_year int, popularity int); ```
	`` create table if not exists Tournaments (id serial primary key, country_id int, FOREIGN KEY (country_id) REFERENCES public.Countries (id), name text, prizepool int); ```

	create table if not exists Matches (team1_id int, team2_id int, winner_id int, studio_id int, commentator_id int, tournament_id int, FOREIGN KEY (team1_id) REFERENCES public.Teams (id), FOREIGN KEY (team2_id) REFERENCES public.Teams (id), FOREIGN KEY (winner_id) REFERENCES public.Teams (id), FOREIGN KEY (studio_id) REFERENCES public.Studios (id), FOREIGN KEY (commentator_id) REFERENCES public.Commentators (id), FOREIGN KEY (tournament_id) REFERENCES public.Tournaments (id), date date);
	create table if not exists UserRoles (id serial primary key, name text););
	create table if not exists Users (id serial primary key, role_id int, FOREIGN KEY (role_id) REFERENCES public.UserRoles (id), --email text, login text, password text);

2) Заполнение

country(1, "Russia"). country(2, "USA"). country(3, "Ukraine").	insert into countries values(1, 'Russia'); insert into countries values(2, 'USA'); insert into countries values(3, 'Ukraine');
sponsor(1, 1, "GGBet"). sponsor(2, 2, "Red Bull"). sponsor(3, 2, "Coca-cola").	insert into sponsors values(1, 1, 'GGBet'); insert into sponsors values(2, 2, 'Red Bull'); insert into sponsors values(3, 2, 'Coca-cola');
team(1, 1, 1, "Virtus Pro"). team(2, 2, 2, "Evil Geniuses"). team(3, 3, 3, "Natus Vincere").	insert into teams values(1, 1, 1, 'Virtus Pro'); insert into teams values(2, 2, 2, 'Evil Geniuses'); insert into teams values(3, 3, 3, 'Natus Vincere');
player(1, 1, 1, "GPK", "Danil", "Skutin", 2001, "Midlaner", 12000). player(2, 2, 1, "Nightfall", "Egor", "Grigorenko", 2002, "Offlaner", 11000). player(3, 3, 3, "Noone", "Vladimir", "Minenko", 1997, "Midlaner", 10000).	insert into players values(1, 1, 1, 'GPK', 'Danil', 'Skutin', 2001, 'Midlaner', 12000); insert into players values(2, 2, 1, 'Nightfall', 'Egor', 'Grigorenko', 2002, 'Offlaner', 11000); insert into players values(3, 3, 3, 'Noone', 'Vladimir', 'Minenko', 1997, 'Midlaner', 10000);

studio(1, 1, "RuHub"). studio(2, 2, "Beyond the Summit"). studio(3, 3, "Maincast").	insert into studios values(1, 1, 'RuHub'); insert into studios values(2, 2, 'Beyond the Summit'); insert into studios values(3, 3, 'Maincast');
commentator(1, 1, 1, "4ce", "Dmitriy", "Filinov", 1991, 10000). commentator(2, 2, 2, "Forsaken Oracle", "Kyle", "Freedman", 1993, 11000). commentator(3, 3, 3, "ALWAYSWANNAFLY", "Andrey", "Bondarenko", 1991, 12000).	insert into commentators values(1, 1, 1, '4ce', 'Dmitriy', 'Filinov', 1991, 10000); insert into commentators values(2, 2, 2, 'Forsaken Oracle', 'Kyle', 'Freedman', 1993, 11000); insert into commentators values(3, 3, 3, 'ALWAYSWANNAFLY', 'Andrey', 'Bondarenko', 1991, 12000);
tournament(1, 2, "The Inernational 2021", 40018195).	insert into tournaments values(1, 2, 'The Inernational 2021', 40018195);
match(1, 2, 1, 1, 1, 1, "2021-11-07"). match(2, 3, 2, 2, 2, 1, "2021-11-08"). match(3, 1, 3, 3, 3, 1, "2021-11-09").	insert into matches values(1, 2, 1, 1, 1, 1, '2021-11-07'); insert into matches values(2, 3, 2, 2, 2, 1, '2021-11-08'); insert into matches values(3, 1, 3, 3, 3, 1, '2021-11-09');

3) Правила – их нет в SQL, но они необходимы для задания вопроса в Prolog

get_matches(CID, RES):-findall((T1ID, T2ID, WID, SID, CID, TID, DATE), match(T1ID, T2ID, WID, SID, CID, TID, DATE), RES).	
team_winner(ID, NAME):-team(ID, _, _, NAME), match(_, _, ID, _, _, _, _). team_winners(RES):-findall((ID, NAME), team_winner(ID, NAME), RES).	
best_player(Nickname, Rating):-player(_, _, _, Nickname, _, _, _, _, Rating), Rating>=11000. best_players(RES):-findall((N, R), best_player(N, R), RES).	
year(Year) :- get_time(Stamp), stamp_date_time(Stamp, DateTime, local), date_time_value(year, DateTime, Year). sum_r([], Sum0, Sum, _):- Sum = Sum0, !. sum_r([H|T], Sum0, Sum, Y):-Sum1 is Sum0 + Y - H, sum_r(T, Sum1, Sum, Y). sum(List, Sum):-year(Year), sum_r(List, 0, Sum, Year).	

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get_avgage(Role, Avg):-findall(Age,
player(_, _, _, _, _, _, Age, Role, _),
Res), sum(Res, Sum), proper_length(Res,
Len), Avg is Sum/Len.
get_maxage(Role, Max):-findall(Age,
player(_, _, _, _, _, _, Age, Role, _),
Res), min_list(Res, MaxY), year(Y), Max
is Y-MaxY.
get_minage(Role, Min):-findall(Age,
player(_, _, _, _, _, _, Age, Role, _),
Res), max_list(Res, MinY), year(Y), Min
is Y-MinY.
get_age_stats(RES):-findall(("Midlaner",
Avgage, Minage, Maxage),
(get_avgage("Midlaner",
Avgage),get_maxage("Midlaner",
Maxage),get_minage("Midlaner", Minage)),
R1),

      findall(("Offlaner", Avgage,
Minage, Maxage), (get_avgage("Offlaner",
Avgage),get_maxage("Offlaner",
Maxage),get_minage("Offlaner", Minage)),
R2),
                        append(R1, R2,
RES).
```

4) Поиск

get_matches(2, MATCHES).	--Все матчи с конкретным комментатором select * from matches where commentator_id = 2
team_winners(TEAMS).	--Все команды которые выиграли хотябы 1 матч select id, name from teams t where exists (select id from matches m where t.id = m.winner_id)
best_players(PLAYERS).	select nickname, rating from players where rating > 11000
get_age_stats(STATS).	--Средние, минимальные и максимальные возраста для ролей select distinct main_role, avg(extract(year from CURRENT_DATE) - birth_year) over(partition by p.main_role) as AvgAge, min(extract(year from CURRENT_DATE) - birth_year) over(partition by p.main_role) as MinAge, max(extract(year from CURRENT_DATE) - birth_year) over(partition by p.main_role) as MaxAge from players p